NUCLEAR REGULATORY COMMISSION

Notice of Opportunity to Comment on Model Safety Evaluation on

Technical Specification Improvement Regarding

Revision to the Completion Time in STS 3.6.6A, "Containment Spray and Cooling Systems"

for Combustion Engineering Pressurized Water Reactors

Using the Consolidated Line Item Improvement Process

AGENCY: Nuclear Regulatory Commission.

ACTION: Request for comment.

SUMMARY: Notice is hereby given that the staff of the U.S. Nuclear Regulatory Commission (NRC) has prepared a model license amendment request (LAR), model safety evaluation (SE), and model proposed no significant hazards consideration (NSHC) determination related to changes to the completion times (CT) in Standard Technical Specification (STS) 3.6.6A, “Containment Spray and Cooling Systems.” The proposed changes would revise STS 3.6.6A by extending the CT for one containment spray system (CSS) train inoperable from 72 hours to seven days, and add a Condition describing required Actions and CT when one CSS and one containment cooling system (CCS) are inoperable. These changes are based on analyses provided in a joint applications report submitted by the Combustion Engineering Owner’s Group (CEOG). The CEOG participants in the Technical Specifications Task Force (TSTF) proposed this change to the STS in Change Traveler No. TSTF-409, Revision 2.

The purpose of these models is to permit the NRC to efficiently process amendments to incorporate these changes into plant-specific STS for Combustion Engineering pressurized water reactors (PWRs). Licensees of nuclear power reactors to which the models apply can request amendments conforming to the models. In such a request, a licensee should confirm

the applicability of the SE and NSHC determination to its plant, and provide the expected supplemental information requested in the model LAR. The NRC staff is requesting comments on the model LAR, model SE and NSHC determination before announcing their availability for referencing in license amendment applications.

DATES: The comment period expires 30 days from the date of this publication. Comments received after this date will be considered if it is practical to do so, but the Commission is able to ensure consideration only for comments received on or before this date.

ADDRESSES: Comments may be submitted either electronically or via U.S. mail.

Submit written comments to: Chief, Rules and Directives Branch, Division of Administrative Services, Office of Administration, Mail Stop: T-6 D59, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

Hand deliver comments to 11545 Rockville Pike, Rockville, Maryland, between 7:45 a.m. and 4:15 p.m. on Federal workdays.

Comments may be submitted by electronic mail to CLIIP@nrc.gov.

Copies of comments received may be examined at the NRC's Public Document Room, located at One White Flint North, Public File Area O1-F21, 11555 Rockville Pike (first floor), Rockville, Maryland.

FOR FURTHER INFORMATION CONTACT: Eric Thomas, Mail Stop: O-12H2, Division of Inspection and Regional Support, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, telephone (301) 415-6772.

SUPPLEMENTARY INFORMATION:

Background

Regulatory Issue Summary 2000-06, “Consolidated Line Item Improvement Process [CLIIP] for Adopting Standard Technical Specifications Changes for Power Reactors,” was issued on March 20, 2000. The CLIIP is intended to improve the efficiency and transparency of NRC licensing processes. This is accomplished by processing proposed changes to the STS in a manner that supports subsequent license amendment applications. The CLIIP includes an opportunity for the public to comment on proposed changes to the STS following a preliminary assessment by the NRC staff and finding that the change will likely be offered for adoption by licensees. This notice is soliciting comment on a proposed change to the STS that changes the CSS CTs for the Combustion Engineering reactor STS, NUREG-1432, Revision 3. The CLIIP directs the NRC staff to evaluate any comments received for a proposed change to the STS and to either reconsider the change or proceed with announcing the availability of the change for proposed adoption by licensees. Those licensees opting to apply for the subject change to TSs are responsible for reviewing the staff’s evaluation, referencing the applicable technical justifications, and providing any necessary plant-specific information. Following the public comment period, the model SE will be finalized, and posted on the NRC webpage. The model SE is accompanied by a model LAR. The model LAR shows licensees the expected level of detail that needs to be included in order to adopt TSTF-409, Rev. 2, as well as guidelines for staff review. The NRC will establish an internal review plan that designates the appropriate staff and approximate timelines to review plant-specific LARs that reference TSTF-409. Each amendment application made in response to the notice of availability will be processed and noticed in accordance with applicable NRC rules and procedures.

This notice involves an increase in the allowed CTs to restore an inoperable CSS on Combustion Engineering PWRs. By letter dated November 10, 2003, the CEOG proposed this change for incorporation into the STS as TSTF-409, Revision 2. This change is based on the

NRC staff-approved generic analyses contained in the CE NPSD-1045-A, “Joint Applications Report: Modification to the Containment Spray System, and Low Pressure Safety Injection System Technical Specifications,” dated March 2000, as approved by NRC in a SE dated December 21, 1999, accessible electronically from the Agencywide Documents Access and Management System's (ADAMS) Public Electronic Reading Room on the Internet (ADAMS Accession No. ML993620241) at the NRC web site http://www.nrc.gov/reading-rm/adams.html. Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in ADAMS, should contact the NRC Public Document Room Reference staff by telephone at 1-800-397-4209, 301-415-4737, or by e-mail to pdr@nrc.gov.

Applicability

This proposed change to revise the Technical Specification (TS) CT for one inoperable CSS is applicable to Combustion Engineering PWRs.

To efficiently process the incoming license amendment applications, the NRC staff requests that each licensee applying for the changes addressed by TSTF-409, Revision 2, use the CLIIP to submit a LAR that adheres to the following model. Any deviations from the model LAR should be explained in the licensee’s submittal. When applying, licensees should ensure they address the eight conditions and one regulatory commitment listed in the model LAR and model SE.

The CLIIP does not prevent licensees from requesting an alternative approach or proposing the changes without providing the information described in the eight model LAR conditions, or making the requested commitment. Variations from the approach recommended in this notice may, however, require additional review by the NRC staff and may increase the time and resources needed for the review. Significant variations from the approach, or inclusion of additional changes to the license, will result in staff rejection of the submittal.

Instead, licensees desiring significant variations and/or additional changes should submit a LAR that does not claim to adopt TSTF-409.

Public Notices

This notice requests comments from interested members of the public within 30 days of the date of this publication. Following the NRC staff's evaluation of comments received as a result of this notice, the NRC staff may reconsider the proposed change or may proceed with announcing the availability of the change in a subsequent notice (possibly with some changes to the model LAR, model SE or model NSHC determination as a result of public comments). If the NRC staff announces the availability of the change, licensees wishing to adopt the change will submit a LAR in accordance with applicable rules and other regulatory requirements. The NRC staff will, in turn, issue a notice of consideration of issuance of amendment to facility operating license(s) for each LAR, a proposed NSHC determination, and an opportunity for a hearing. A notice of issuance of an amendment to operating license(s) will also be issued to announce the revised requirements for each plant that applies for and receives the requested change.

Dated at Rockville, Maryland this 29th day of March 2006.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Thomas H. Boyce, Branch Chief
Technical Specifications Branch
Division of Inspection and Regional Support
Office of Nuclear Reactor Regulation

FOR INCLUSION ON THE TECHNICAL SPECIFICATION WEB PAGE
THE FOLLOWING EXAMPLE OF A LICENSE AMENDMENT REQUEST (LAR) WAS PREPARED BY THE NRC STAFF TO FACILITATE THE ADOPTION OF TECHNICAL SPECIFICATIONS TASK FORCE (TSTF) TRAVELER TSTF-409, REVISION 2 "CONTAINMENT SPRAY SYSTEM COMPLETION TIME EXTENSION (CE NPSD-1045-A)." THE MODEL PROVIDES THE EXPECTED LEVEL OF DETAIL AND CONTENT FOR A LAR TO ADOPT TSTF-409, REVISION 2. LICENSEES REMAIN RESPONSIBLE FOR ENSURING THAT THEIR PLANT-SPECIFIC LAR FULFILLS THEIR ADMINISTRATIVE REQUIREMENTS AS WELL AS NRC REGULATIONS.

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

SUBJECT: PLANT NAME APPLICATION FOR TECHNICAL SPECIFICATION IMPROVEMENT TO EXTEND THE COMPLETION TIME FOR CONTAINMENT SPRAY SYSTEM INOPERABILITY IN ACCORDANCE WITH TSTF-409, REVISION 2

Dear Sir or Madam:

In accordance with the provisions of Section 50.90 of Title 10 of the *Code of Federal Regulations* (10 CFR), [LICENSEE] is submitting a request for an amendment to the technical specifications (TS) for [PLANT NAME, UNIT NOS.].

The proposed changes would revise TS 3.6.6A, "Containment Spray and Cooling Systems," by extending from 72 hours to seven days the completion time (CT) to restore an inoperable containment spray system (CSS). In addition, a Condition would be added to the TS to allow one CSS and one containment cooling system (CCS) to be inoperable for a period of 72 hours.

The changes are consistent with NRC-approved Industry Technical Specification Task Force (TSTF) Standard Technical Specification Change Traveler, TSTF-409, Revision 2, "Containment Spray System Completion Time Extension (CE NPSD-1045-A)."

Enclosure 1 provides a description and assessment of the proposed changes and confirmation of applicability. Enclosure 2 provides the existing TS pages marked-up to show the proposed changes. Enclosure 3 provides the existing TS Bases pages marked-up to reflect the proposed changes (for information only). Final TS Bases will be provided in a future update to the Updated Final Safety Analysis Report (UFSAR) in accordance with the Bases Control Program. Attachments 1 through 8 provide the discussions of [LICENSEE'S] evaluations and supporting information with regard to the conditions stipulated in Section 4.2.1 of Enclosure 1.

[LICENSEE] requests approval of the proposed license amendment by [DATE], with the amendment being implemented [BY DATE OR WITHIN X DAYS]. In accordance with 10 CFR 50.91, a copy of this application, with enclosures, is being provided to the designated [STATE] Official.

I declare under penalty of perjury under the laws of the United States of America that I am authorized by [LICENSEE] to make this request and that the foregoing is true and correct. [Note that request may be notarized in lieu of using this oath or affirmation statement]. If you should have any questions regarding this submittal, please contact [ ].

Sincerely,

Name, Title

Enclosures: 1. Description and Assessment of Proposed Changes
2. Proposed Technical Specification Changes
3. Proposed Technical Specification Bases Changes (if applicable)

Attachments: 1. Licensee's supporting information for condition 1
2. Licensee's supporting information for condition 2
3. Licensee's supporting information for condition 3
4. Licensee's supporting information for condition 4
5. Licensee's supporting information for condition 5
6. Licensee's supporting information for condition 6
7. Licensee's supporting information for condition 7
8. Licensee's supporting information for condition 8

cc: NRR Project Manager
Regional Office
Resident Inspector
State Contact
ITSB Branch Chief

1.0 DESCRIPTION

This letter is a request to amend Operating License(s) [LICENSE NUMBER(S)] for [PLANT/UNIT NAME(S)].

The proposed changes would revise Technical Specification (TS) 3.6.6A, "Containment Spray and Cooling Systems," by extending from 72 hours to seven days the completion time (CT) to restore an inoperable containment spray system (CSS) train to operable status, and would add a Condition describing the required action and CT when one CSS and one containment cooling system (CCS) are inoperable.

The changes are consistent with NRC approved Industry Owner's Group Technical Specification Task Force (TSTF) Standard Technical Specification Change Traveler TSTF-409, Revision 2 (Rev. 2), "Containment Spray System Completion Time Extension (CE NPSD-1045-A)." TSTF-409, Rev. 2 was approved by the NRC on [DATE].

2.0 PROPOSED CHANGE

Specifically, the proposed revision extends the CT (or allowed outage time) that one CSS train is permitted to remain inoperable from 72 hours to seven days based on Reference 1, as accepted by, and subject to the limitations specified in, Reference 2. TSTF-409, Rev. 2 states that the longer CT will enhance overall plant safety by avoiding potential unscheduled plant shutdowns and allowing greater availability of safety significant components during shutdown. In addition, the TSTF-409, Rev. 2 states that this extension provides for increased flexibility in scheduling and performing maintenance and surveillance activities in order to enhance plant safety and operational flexibility during lower modes of operation.

The revision also adds a condition statement to allow one CSS train and one CCS train to be inoperable for up to 72 hours. Since the Combustion Engineering Owners Group (CEOG) joint applications report did not evaluate the concurrent inoperabilities of one CSS train and one CCS train, the CT for this condition was limited to 72 hours.

[LICENSEE] also proposes to make changes to the supporting TS Bases. Changes to the Bases include supporting information justifying the addition of the Condition statement for one CSS train and one CCS train inoperable. The Bases changes also include a reviewer's note that requires [LICENSEE] to adopt Reference 1 and meet the requirements of References 1 and 2 prior to utilizing the 7-day CT for one inoperable CSS. Finally, a reference to Reference 1 is added to the Bases.

In summary, [LICENSEE] proposes to extend the CT for one inoperable CSS from 72 hours to 7 days based on Reference 1, and add a Condition statement to allow one CSS train and one CCS to be inoperable for up to 72 hours.

3.0 BACKGROUND

The function of the containment heat removal systems under accident conditions is to remove heat from the containment atmosphere, thus maintaining the containment pressure and temperature at acceptably low levels. The systems also serve to limit offsite radiation levels by reducing the pressure differential between the containment atmosphere and the external environment, thereby decreasing the driving force for fission product leakage across the containment. The two containment heat removal systems are the CCS and the CSS. The CCS fan coolers are designed to operate during both normal plant operations and under loss-of-coolant accident (LOCA) or main steam line break (MSLB) conditions. The CSS is designed to operate during accident conditions only.

The heat removal capacity of the CCS and CSS is sufficient to keep the containment

temperature and pressure below design conditions for any size break, up to and including a double-ended break of the largest reactor coolant pipe. The systems are also designed to mitigate the consequences of any size break, up to and including a double-ended break of a main steam line. The CCS and CSS continue to reduce containment pressure and temperature and maintain them at acceptable levels post-accident.

The CCS and CSS at [PLANT NAME] each consist of [Substitute plant-specific configuration if it differs from the following description] two redundant loops and are designed such that a single failure does not degrade their ability to provide the required heat removal capability. Two of four containment fan coolers and one CSS loop are powered from one safety-related bus. The other two containment fan coolers and CSS loop are powered from another independent safety-related bus. The loss of one bus does not affect the ability of the containment heat removal systems to maintain containment temperature and pressure below the design values in a post-accident mode.

The [PLANT NAME] CSS consists of [Substitute plant-specific configuration if it differs from the following description] two independent and redundant loops each containing a spray pump, shutdown heat exchanger, piping, valves, spray headers, and spray nozzles. It has two modes of operation, which are:

1. The injection mode, during which the system sprays borated water from the refueling water tank (RWT) into the containment, and
2. The recirculation mode, which is automatically initiated by the recirculation actuation signal (RAS) after low level is reached in the RWT. During this mode of operation, the safety injection system (SIS) sump provides suction for the spray pumps.

Containment spray is automatically initiated by the containment spray actuation signal coincident with the safety injection actuation signal and high containment pressure signal. If required, the operator can manually activate the system from the main control room.

Each CSS pump, together with a CCS loop, provides the flow necessary to remove the heat generated inside the containment following a LOCA or MSLB. Upon system activation, the pumps are started and the borated water flows into the containment spray headers. When low level is reached in the RWT, sufficient water has been transferred to the containment to allow for the recirculation mode of operation. Spray pump suction is automatically realigned to the SIS sump upon a RAS.

During the recirculation mode, the spray water is cooled by the shutdown heat exchangers prior to discharge into the containment. The shutdown heat exchangers are cooled by the component cooling water system. Post-LOCA pH control is provided by [Substitute plant-specific configuration if it differs from the following description] trisodium phosphate dodecahydrate, which is stored in stainless steel baskets located in the containment near the SIS sump intake.

The longer CT for an inoperable CSS train will enhance overall plant safety by avoiding potential unscheduled plant shutdowns and allowing greater availability of safety significant components during shutdown. In addition, this extension provides for increased flexibility in scheduling and performing maintenance and surveillance activities in order to enhance plant safety and operational flexibility during lower modes of operation.

4.0 TECHNICAL ANALYSIS

[LICENSEE] has reviewed References 1 and 2, as well as TSTF-409, Rev. 2, and the

model SE published on [DATE] ([ ] FR [ ]) as part of the CLIIP Notice for Comment. [LICENSEE] has applied the methodology in Reference 1 to develop the proposed TS changes. [LICENSEE] has also concluded that the justifications presented in TSTF-409, Rev. 2 and the model SE prepared by the NRC staff are applicable to [PLANT NAME], and justify this amendment for the incorporation of changes to the [PLANT NAME] TS.

In determining the suitability and safety impact of its adoption of TSTF-409, Rev. 2, [LICENSEE] analyzed the effect of increasing the CT for one CSS train to remain out of service using both traditional engineering considerations and probabilistic risk assessment (PRA) methods.

4.1 Traditional (Deterministic) Engineering Analysis

The functions and operation of the CSS and CCS were described in Section 3.0 of this application. Based on a review of the design-basis requirements for the CSS, [LICENSEE] concluded that the loss of one CSS train is well within the design-basis analyses. This conclusion is based on the fact that each CSS pump, together with a CCS loop, provides the flow necessary to remove the heat generated inside the containment following a LOCA or MSLB. Therefore, the combination of one CSS pump and one CCS loop can carry out the design functions of maintaining the containment pressure and temperature at acceptably low levels following a design-basis accident (DBA), and limiting offsite radiation levels by reducing the pressure differential between the containment atmosphere and the external environment, thereby decreasing the driving force for fission product leakage across the containment.

The plant status with both CSS trains inoperable is covered by TS 3.6.6A, ACTION G., which states:

> "[With] two containment spray trains inoperable or any combination of three or more [CSS/CCS] trains inoperable, LCO [Limiting Condition for Operation] 3.0.3 shall be entered immediately."

ACTION G addresses the condition in which two CSS trains are inoperable and requires restoration of at least one CSS train to OPERABLE status within 1 hour or the plant be placed in HOT SHUTDOWN in 6 hours and COLD SHUTDOWN within the following 30 hours, with COLD SHUTDOWN being the acceptable end state. These requirements are consistent with similar requirements elsewhere in the TS and therefore are acceptable.

The plant status with one CSS train and one CCS train inoperable is covered by TS 3.6.6A, ACTION D, which states:

> "[With] one containment spray and one containment cooling train inoperable, restore containment spray train to OPERABLE status within 72 hours, or restore containment cooling train to OPERABLE status within 72 hours."

ACTION D ensures that the iodine removal capabilities of the CSS are available, along with 100 percent of the heat removal needs after an accident. The supporting analyses performed in CE NPSD-1045-A did not evaluate the concurrent inoperabilities of one CSS train and one CCS train, therefore, the current CT of 72 hours is retained in Condition D. The 72 hour Completion Time was developed taking into account the redundant heat removal capabilities afforded by combinations of the CSS and CCS, the iodine removal function of the CSS, and the

low probability of a DBA occurring during this period.

4.2 Probabilistic Risk Assessment Evaluation

[LICENSEE] evaluated the proposed CT extension for the CSS using Reference 4. This is the same methodology that the NRC staff used in Reference 2. The Principles of Risk-Informed Integrated Decisionmaking listed in Reference 4 are as follows:

Principle I: The proposed CT change meets the current regulation
Principle II: The proposed CT change is consistent with the defense-in-depth philosophy
Principle III: The proposed CT change maintains sufficient safety margin
Principle IV: The CT risk (Incremental Conditional Core Damage Probability [ICCDP], and Incremental Conditional Large Early Release Probability [ICLERP]) is small
Principle V: Commitment to monitor the impact of the proposed CT change

In Reference 2, the NRC staff found, and [LICENSEE] agrees, that in risk-informed TS CT applications, Principle I is met, since regulations do not require specific CTs, but, rather, require "remedial actions" when an LCO cannot be met. Additionally, in its analysis of Principle III, the NRC staff found, and [LICENSEE] agrees, that the proposed CT extension maintains sufficient safety margins. For [PLANT NAME], the loss of one CSS train is well within the plant's design basis.

In Reference 2, the NRC staff determined that the intent of Principles II, IV, and V would be met by a three-tiered approach to evaluate the plant-specific risk impact associated with the proposed TS changes, consistent with the requirements of Reference 4. The first tier evaluates the plant-specific PRA model and the impact of the proposed CT extension on plant operational risk. The second tier addresses the need to preclude potentially high risk configurations by identifying the need for any additional constraints or compensatory actions that, if implemented, would avoid or reduce the probability of a risk-significant configuration during the time when one CSS train is out of service. The third tier evaluates [LICENSEE'S] proposed Configuration Risk Management Program (CRMP) to ensure that the applicable plant configuration will be appropriately assessed from a risk perspective before entering into or during the proposed CT.

In addition, the NRC staff determined in Reference 2 that the risk analysis methodology and approach used by the CEOG to estimate the risk impact of increasing the CT were reasonable. For most plants that participated in the joint application report, the NRC staff found that the risk impact was shown to be consistent with the acceptance guidelines for change in core damage frequency (ΔCDF), change in large early release frequency (ΔLERF), incremental conditional core damage probability (ICCDP), and incremental conditional large early release probability (ICLERP) specified in References 3 and 4 and Chapters 19.0 and 16.1 of Reference 5. However, not all Combustion Engineering (CE) plants participated in the joint application report, and the estimated risk impacts for some plants exceeded the Reference 3 and/or Reference 4 acceptance guidelines, which would require additional justifications and/or compensatory measures to be provided for these plants to be determined to have acceptable risk impacts.

In addition, the NRC staff found that the Tier 2 and Tier 3 evaluations, as described in Reference 4, could not be approved generically since they were not complete, which would require that each individual plant-specific license amendment seeking adoption of TSTF-409, Rev. 2 would need to include an assessment with respect to the Tier 2 and Tier 3 principles of Reference 4.

4.2.1 Conditions and Supporting Information

The following conditions are provided to support adoption of TSTF-409, Rev. 2 by [PLANT NAME]. Responses to the conditions are contained in Attachments 1 through 8 to this application: [NOTE: Licensees who cannot meet the Expectations and Acceptance Criteria listed in these conditions should not submit an application to adopt TSTF-409, Rev. 2 under the CLIIP.]

1. As shown in Attachment 1, the plant-specific Tier 1 information associated with extending the CSS CT meets the acceptance guidelines of References 3 and 4 associated with ΔCDF, ΔLERF, ICCDP, and ICLERP.

   [EXPECTATIONS/ACCEPTANCE CRITERIA: The licensee's submittal must provide the ΔCDF, ΔLERF, ICCDP, and ICLERP values related to the CSS extended CT and confirm that they meet the associated acceptance guidelines of References 3 and 4 as no more than a small risk increase (i.e., are in Region II or III of the acceptance guidelines figures). If a zero maintenance PRA model is used (as opposed to an average/nominal maintenance PRA model) in performing these calculations, then the licensee must make a commitment that no other maintenance will be performed during the extended CSS CT and describe how this commitment will be implemented.]

2. As shown in Attachment 2, the technical adequacy (quality) of [PLANT NAME'S] plant-specific PRA is acceptable for this application in accordance with the guidance provided in Reference 3. Specifically, the supporting information addresses the following areas:

   a. Justification that the plant-specific PRA reflects the as-built, as-operated plant.
   b. Discussion of plant-specific PRA updates and upgrades since the individual plant examination (IPE) and individual plant examination of external events (IPEEE).
   c. Discussion of plant-specific PRA peer reviews and/or self-assessments performed, their overall conclusions, any facts and observations (F&Os) applicable to this application, and the licensee evaluation and resolution (e.g., by implementing model changes and/or sensitivity studies) of these F&Os to demonstrate the conclusions of the plant-specific analyses for this application are not adversely impacted (i.e., continued acceptability of the proposed extension of the CSS CT).
   d. Description of the licensee's plant-specific PRA configuration control (quality assurance) program and associated procedures.
   e. Overall determination of the adequacy of the plant-specific PRA with respect to this application.

   [EXPECTATION: The licensee's submittal must describe the scope of the plant-specific PRA and must justify its technical adequacy (quality) for this application in accordance with the guidance provided in Reference 3. Specifically, the supporting information must address each area in sufficient detail as shown in

the following **ACCEPTANCE CRITERIA:**

a. The licensee must provide a justification that confirms that the plant-specific PRA reflects the as-built, as-operated plant. This should include a description of the licensee's data and model update process, and the frequency of these activities. The licensee should also describe how the plant/corporate PRA staff are involved in (and/or made aware of) plant and operational/procedural modifications.

b. The licensee must provide a summary description of the plant-specific PRA updates and upgrades since the IPE and IPEEE .

c. The licensee must discuss their plant-specific PRA peer reviews and/or any self-assessments performed (especially noting those conducted per the Nuclear Energy Institute (NEI) industry peer review guidelines, American Society of Mechanical Engineers (ASME) PRA Standard, and Regulatory Guide (RG) 1.201), their overall conclusions, any F&Os applicable to this application, and the licensee's evaluation and resolution (e.g., by implementing model changes and/or sensitivity studies) of these F&Os to demonstrate the conclusions of the plant-specific analyses for this application are not adversely impacted (i.e., continued acceptability of the proposed extension of the CSS CT).

d. The licensee must describe their plant-specific PRA configuration control (quality assurance) program and associated procedures.

e. The licensee must make an overall determination of the adequacy of their plant-specific PRA, confirming it is adequate with respect to this application.]

3. Attachment 3 provides supporting information verifying that the plant risk impact associated with external events (e.g., fires, seismic, tornados, high winds, etc.) does not adversely impact the conclusions of the plant-specific analyses for this application.

[EXPECTATIONS: The licensee's submittal must discuss the plant risks associated with external events and specifically identify (quantitatively and qualitatively, as appropriate) the impact of CSS CT extension on the risks associated with external events.

If the licensee has performed updated analyses of an external event since the staff review and acceptance of their IPEEE, the licensee must describe the significant changes involved in their updated analyses and the impact of these changes on plant risk associated with this external event.

For external events in which the licensee used a screening approach in their IPEEE to screen the external event from further consideration, the licensee must specifically identify these external events and provide confirmation that the

screening took no credit for CSS availability/reliability (e.g., fire conditional core damage probability (CCDP) models/calculations did not include CSS failure rates or unavailabilities) and confirm that the screening is still appropriate, especially considering plant/procedural modifications since the screening analyses were performed.

If, however, an external event was screened from consideration and part of the screening took credit for the availability/reliability of the CSS, or if plant/procedural modifications have occurred such that the external event would no longer be screened out, then the licensee must provide an analysis of the existing condition which also considers the change in impact due to the requested CT extension.

ACCEPTANCE CRITERIA: For external events for which the licensee has a PRA, the licensee must provide the risk values (i.e., CDF and LERF) associated with the specifically analyzed external events and the change in risk (i.e., ΔCDF, ΔLERF, ICCDP, and ICLERP) associated with the CSS CT extension. The licensee must also provide the total risk and total change in risk due to all PRA-analyzed contributors (combining internal events, internal flooding, external events, and shutdown PRA results) and this total contribution must meet References 3 and 4 acceptance guidelines for the NRC staff to conclude the quantified risk associated with the extension request is acceptable.

For external events for which the licensee does not have a PRA (and it is not screened out as above), but rather relies on a non-PRA method (e.g., seismic margins analysis (SMA) or fire-induced vulnerability evaluation (FIVE)), to determine if the plant risk is acceptable, the licensee must confirm that there were and still are no vulnerabilities or outliers associated with these external events, or identify any vulnerabilities or outliers that were identified in their documented analyses (most likely in their IPEEE) and confirm that all of these vulnerabilities or outliers have been resolved and, as needed, the appropriate plant/procedural modifications have been implemented as described in their documented analyses.]

4. Supporting information is provided in Attachment 4, consistent with the evaluation summary and conclusions (Sections 7 and 8) provided in Reference 2, that discusses implementation of procedures that prohibit entry into an extended CSS CT for scheduled maintenance purposes if external event conditions or warnings (e.g., severe weather warnings for ice, tornados, high winds, etc.) are in effect. [LICENSEE'S] discussion confirms that [PLANT NAME'S] procedures include compensatory measures and normal plant practices that help avoid potentially high risk configurations during the proposed extension of the CSS CT. This supporting information must also address the Tier 2 aspects of Reference 4.

[EXPECTATIONS: The licensee's submittal must discuss (including licensee commitments related to) implementation of procedures that prohibit entry into an extended CSS CT for scheduled maintenance purposes if external event

conditions or warnings are in effect. If the licensee does not want to implement this prohibition for specific severe weather conditions or warnings, the licensee must explicitly identify these event conditions/warnings and provide a justification for not including them.

The licensee must also confirm that their procedures include compensatory measures and normal plant practices that help avoid potentially high risk configurations during the proposed extension of the CSS CT. This supporting information must also address the Tier 2 aspects of Reference 4. The Tier 2 evaluation is meant to be an early evaluation (at the license submittal stage) to identify and preclude potentially high-risk plant configurations that could result if equipment, in addition to that associated with the proposed license amendment, is taken out of service simultaneously, or if other risk-significant operational factors, such as concurrent system or equipment testing, are also involved.

ACCEPTANCE CRITERIA: The Tier 2 evaluation needs to identify, as part of the licensee's submittal, potentially high-risk plant configurations that need to be precluded and identify how this is implemented (i.e., typically these aspects result in licensees establishing compensatory measures/commitments to ensure these configurations are precluded). If, in conducting the evaluation, the licensee identifies no high-risk plant configurations, then the licensee needs to explicitly state this fact.]

5. Attachment 5 provides supporting information, consistent with the evaluation summary and conclusions (Sections 7 and 8) provided in Reference 2, that describes the plant-specific risk-informed CRMP to assess the risk associated with the removal of equipment from service during the extended CSS CT. In this description, [LICENSEE] confirms that the program provides the necessary assurances that appropriate assessments of plant risk configurations are sufficient to support the proposed CSS CT extension request. This supporting information also addresses the Tier 3 aspects of Reference 4.

[EXPECTATIONS/ACCEPTANCE CRITERIA: The licensee's submittal must describe their CRMP, including how it reflects the current plant PRA model (specifically identifying any deviations and simplifications in the CRMP model from the plant-specific PRA model) and how the CRMP is updated to remain consistent with the plant-specific PRA.

The licensee's submittal must also describe how the CRMP provides the necessary assurances that appropriate assessments of plant risk configurations are sufficient to support the proposed CT extension request for the CSS.

Finally, the licensee's submittal must address the Tier 3 aspects of Reference 4, including the description of the CRMP, and must confirm that their CRMP meets all aspects of Section 2.3.7 of Reference 4, specifically describing how their CRMP meets each of the four Key Components identified in this Section. The Tier 3 evaluation ensures that the CRMP is adequate when maintenance is about to commence, as opposed to the early (submittal stage) evaluation

performed for Tier 2.]

6. Attachment 6 provides supporting information, consistent with the evaluation summary (Section 7) provided in Reference 2, confirming that the licensee's CRMP will not allow "at power" maintenance of the CSS and shutdown cooling system (SDCS) at the same time since the SDCS may be credited as a backup to CSS in supporting the containment spray function. Similarly, supporting information is provided confirming that the licensee's CRMP will ensure there is at least one CSS pump operable when maintenance of the CSS is performed in the lower modes of operation since CSS pumps are a backup to the SDCS pumps.

   [EXPECTATION: The licensee's submittal must describe the relationship/interfaces between the CSS and SDCS.

   ACCEPTANCE CRITERIA: If the SDCS can be used as a backup to the CSS, then the licensee must confirm that "at power" maintenance of the CSS and SDCS will not be allowed at the same time and describe how this is controlled (e.g., specifically identified in the CRMP as a configuration that is not allowed). If the SDCS cannot be used (and is not credited) as a backup to CSS, then the licensee needs to explicitly state this fact.

   If CSS pumps can be used as a backup to the SDCS pumps, then the licensee must confirm that at least one CSS pump is required to be operable when maintenance of the CSS is performed in lower modes of operation and must describe how this is controlled. If CSS pumps cannot be used (and are not credited) as a backup to SDCS pumps in lower modes of operation, then the licensee needs to explicitly state this fact.]

7. Attachment 7 provides supporting information confirming that the licensee's CRMP assessing Reference 3 and 4 risk acceptance guideline metrics, including ΔCDF, ΔLERF, ICCDP, and ICLERP, continues to be met for the CSS extended CT.

   [EXPECTATIONS/ACCEPTANCE CRITERIA: The licensee must confirm that their CRMP quantitative model calculates ΔCDF, ΔLERF, ICCDP, and ICLERP and that their CRMP quantitative model explicitly models the CSS or has been modified to include the CSS, which will be used whenever CSS components are made unavailable.

   The licensee also must describe how their CRMP ensures Reference 3 and 4 acceptance guidelines continue to be met during implementation and must describe the actions that are taken if the above calculated metrics exceed the associated Reference 3 and 4 acceptance guidelines during CRMP implementation (i.e., plant-specific Tier 3/Maintenance Rule results exceed acceptance guidelines).]

8. Attachment 8 provides information addressing how plant-specific systems, structures and components (SSC) reliability and availability are monitored and assessed at the plant under the Maintenance Rule (i.e. 10 CFR 50.65) to confirm that performance continues to be consistent with the analyses used to justify the extended CT and that the risk-informed decision remains valid through implementation.

   [EXPECTATIONS/ACCEPTANCE CRITERIA: The licensee must describe how plant-specific SSC reliability and availability are monitored and assessed at the plant under the Maintenance Rule (i.e., 10 CFR 50.65) to confirm that performance continues to be consistent with the analyses used to justify the extended CT. In providing this description, the licensee should also indicate how they periodically assess previous risk-informed licensing action decisions to ensure that these decisions remain valid (i.e., continue to meet the Reference 3 and Reference 4 acceptance guidelines) for the current plant operations and plant-specific PRA and what actions they take if a previously-approved risk-informed licensing action decision is determined to no longer meet these acceptance guidelines.]

4.2.2 Regulatory Commitment

The Reference 4 Tier 3 program ensures that, while the plant is following the TS ACTIONS associated with an extended CT for restoring an inoperable CSS to operable status, additional activities will not be performed that could further degrade the capabilities of the plant to respond to a condition that the inoperable CSS is designed to mitigate and, as a result, increase plant risk beyond that determined by the Reference 1 analyses. [LICENSEE's] implementation of Reference 4 Tier 3 guidelines generally implies the assessment of risk with respect to CDF. However, the proposed CSS extended CT impacts accident sequences that can be mitigated following core damage and, consequently, impacts LERF as well as CDF. Therefore, [LICENSEE] has enhanced its CRMP, [OPTIONAL: as implemented under 10 CFR 50.65(a)(4), the Maintenance Rule,] to include a LERF methodology and assessment.

5.0 REGULATORY ANALYSIS

5.1 No Significant Hazards Consideration

[LICENSEE] has reviewed the proposed no significant hazards consideration determination published in the *Federal Register* on [DATE] ([ ] FR [ ]) as part of the CLIIP. [LICENSEE] has concluded that the proposed determination presented in the notice is applicable to [PLANT NAME] and the determination is hereby incorporated by reference to satisfy the requirements of 10 CFR 50.91(a).

5.2 Applicable Regulatory Requirements/Criteria

Based on its answers to the Section 4.2.1 questions provided in Attachments 1 through 8 to this application [LICENSEE] determines that the information provided in this application is consistent with Reference 2. This determination is based on the following:

1. The traditional engineering evaluation reveals that the loss of one CSS train is well within [PLANT NAME's] design basis analyses.

2. By meeting the conditions identified in Section 4.2.1, [LICENSEE] believes that its PRA model is acceptable for this application and also concludes that there is minimal impact of the CT extensions for the CSS system on plant operational risk (Tier 1 evaluation).

3. By meeting the conditions identified in Section 4.2.1, [LICENSEE] will ensure that the its implementation will identify potentially high risk configurations and the need for any additional constraints or compensatory actions that, if implemented, would avoid or reduce the probability of a risk-significant configuration (Tier 2 evaluation).

4. By meeting the conditions identified in Section 4.2.1, [PLANT NAME] will ensure that its risk-informed CRMP will satisfactorily assess the risk associated with the removal of equipment from service during the proposed CSS CT (Tier 3 evaluation) and the CRMP and plant risk will be managed by plant procedures.

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

6.0 ENVIRONMENTAL CONSIDERATION

[LICENSEE] has reviewed the environmental evaluation included in the model safety evaluation as part of the CLIIP. [LICENSEE] concluded that the staff's findings presented in that the evaluation are applicable to [PLANT NAME] and the evaluation is hereby incorporated by reference for this application.

7.0 REFERENCES

[Licensee should include an applicable list of references, including but not limited to]

1. Joint Applications Report: Modification to the Containment Spray System, and Low Pressure Safety Injection System Technical, CE Owners Group, CE NPSD-1045, March 2000.
2. Safety Evaluation by the Office of Nuclear Reactor Regulation Related to CE Owners Group CE-NPSD-1045, "Joint Application Report, Modification to the Containment Spray System, and the Low Pressure Safety Injection System Technical Specifications, December 21, 1999.
3. USNRC Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," Revision 1, November 2002.
4. USNRC Regulatory Guide 1.177, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications," August 1998.
5. NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," June 1996.

PROPOSED TECHNICAL SPECIFICATION CHANGES (MARK-UP)

Enclosure 2

CHANGES TO TS BASES

Enclosure 3

CONDITION (1)
[LICENSEE'S] EVALUATION AND SUPPORTING INFORMATION

Attachment 1

CONDITION (2)
[LICENSEE'S] EVALUATION AND SUPPORTING INFORMATION

Attachment 2

CONDITION (3)
[LICENSEE'S] EVALUATION AND SUPPORTING INFORMATION

Attachment 3

CONDITION (4)
[LICENSEE'S] EVALUATION AND SUPPORTING INFORMATION

Attachment 4

CONDITION (5)
[LICENSEE'S] EVALUATION AND SUPPORTING INFORMATION

Attachment 5

CONDITION (6)
[LICENSEE'S] EVALUATION AND SUPPORTING INFORMATION

Attachment 6

CONDITION (7)
[LICENSEE'S] EVALUATION AND SUPPORTING INFORMATION

Attachment 7

CONDITION (8)
[LICENSEE'S] EVALUATION AND SUPPORTING INFORMATION

Attachment 8

MODEL SAFETY EVALUATION

U.S. Nuclear Regulatory Commission

Office of Nuclear Reactor Regulation

Consolidated Line Item Improvement

Technical Specification Task Force TSTF-409, Revision 2

"Containment Spray System Completion Time Extension"

1.0 INTRODUCTION

By letter to the Nuclear Regulatory Commission (NRC, Commission) dated [DATE] (Agencywide Documents Access and Management System (ADAMS) Accession Number MLXXXXXXXXX), [LICENSEE] (the licensee) requested changes to the Technical Specifications (TSs) for [PLANT NAME]. The proposed changes would revise TS 3.6.6A, "Containment Spray and Cooling Systems," by extending from 72 hours to seven days the completion time (CT) to restore an inoperable containment spray system (CSS) train to operable status, and would add a Condition describing the required action and CT when one CSS and one containment cooling system (CCS) are inoperable.

The changes are based on Technical Specification Task Force (TSTF) Change Traveler, TSTF-409, Revision 2 (Rev. 2), "Containment Spray System Completion Time Extension (CE NPSD-1045-A)" and associated TS Bases. TSTF-409, Rev. 2, submitted to the NRC by the TSTF in a letter dated November 10, 2003 (ADAMS Accession Number ML033280006), was approved by the NRC on [DATE] and published in the *Federal Register* on [DATE] ([ ] FR [ ]).

TSTF-409, Rev. 2 is based on Combustion Engineering Owner's Group (CEOG) Joint Application Report CE NPSD-1045-A, "Joint Applications Report for Modifications to the Containment Spray System Technical Specifications," dated March 2000 (Reference 1), as accepted by, and subject to the limitations specified in, the associated NRC safety evaluation

(SE), dated December 21, 1999 (ADAMS Accession Number ML993620241) (Reference 2).

In TSTF-409, Rev. 2, the CEOG states that the longer CT for restoring an inoperable CSS train to operable status will enhance overall plant safety by avoiding potential unscheduled plant shutdowns and allowing greater availability of safety significant components during shutdown. In addition the CEOG states that this extension provides for increased flexibility in scheduling and performing maintenance and surveillance activities in order to enhance plant safety and operational flexibility during lower modes of operation.

2.0 REGULATORY EVALUATION

Since the mid-1980's, the NRC has been reviewing and granting improvements to TS that are based, at least in part, on probabilistic risk assessment (PRA) insights. In its final policy statement on TS improvements dated July 22, 1993 (58 FR 39132), the NRC stated that it:

> ...expects that licensees, in preparing their Technical Specification related submittals, will utilize any plant-specific PSA [probabilistic safety assessment][1] or risk survey and any available literature on risk insights and PSAs.... Similarly, the NRC staff will also employ risk insights and PSAs in evaluating Technical Specifications related submittals. Further, as a part of the Commission's ongoing program of improving Technical Specifications, it will continue to consider methods to make better use of risk and reliability information for defining future generic Technical Specification requirements.

The NRC reiterated this point when it issued the revision to 10 CFR 50.36, “Technical Specifications,” in July 1995. In August 1995, the NRC adopted a final policy statement on the

[1]PSA and PRA are used interchangeably herein

use of PRA methods in nuclear regulatory activities that encouraged greater use of PRA to improve safety decision-making and regulatory efficiency. The PRA policy statement included the following points:

1. The use of PRA technology should be increased in all regulatory matters to the extent supported by the state-of-the-art in PRA methods and data, and in a manner that complements the NRC's deterministic approach and supports the NRC's traditional defense-in-depth philosophy.

2. PRA and associated analyses (e.g., sensitivity studies, uncertainty analyses, and importance measures) should be used in regulatory matters, where practical within the bounds of the state-of-the-art, to reduce unnecessary conservatism associated with current regulatory requirements.

3. PRA evaluations in support of regulatory decisions should be as realistic as practicable and appropriate supporting data should be publicly available for review.

In March 1998, the CEOG submitted a joint applications report for the NRC staff's review entitled, "Joint Applications Report for Modifications to the Containment Spray System and Low Pressure Safety System Technical Specifications." The NRC review accepting this joint applications report for referencing in license applications for Combustion Engineering (CE) plants, including appropriate exclusions, conditions, and limitations, is documented in Reference 2. The final, NRC-approved joint applications report, (Reference 1) is dated March 2000.

3.0 TECHNICAL EVALUATION

The NRC staff evaluated the licensee's proposed amendment to extend the TS CT for one CSS train out of service from 72 hours to seven days using insights derived from traditional engineering considerations and the use of PRA methods to determine the safety impact of extending the CT.

3.1 Traditional Engineering Evaluation

The function of the containment heat removal systems under accident conditions is to remove heat from the containment atmosphere, thus maintaining the containment pressure and temperature at acceptably low levels. The systems also serve to limit offsite radiation levels by reducing the pressure differential between the containment atmosphere and the external environment, thereby decreasing the driving force for fission product leakage across the containment. The two containment heat removal systems are the CCS and CSS. The CCS fan coolers are designed to operate during both normal plant operations and under loss-of-coolant accident (LOCA) or main steam line break (MSLB) conditions. The CSS is designed to operate during accident conditions only.

The heat removal capacity of the CCS and CSS is sufficient to keep the containment temperature and pressure below design conditions for any size break, up to and including a double-ended break of the largest reactor coolant pipe. The systems are also designed to mitigate the consequences of any size break, up to and including a double-ended break of a main steam line. The CCS and CSS continue to reduce containment pressure and temperature and maintain them at acceptable levels post-accident.

The CCS and CSS at [PLANT NAME] each consist of [Substitute plant-specific configuration if it differs from the following description] two redundant loops and are designed

such that a single failure does not degrade their ability to provide the required heat removal capability. Two of four containment fan coolers and one CSS loop are powered from one safety-related bus. The other two containment fan coolers and CSS loop are powered from another independent safety related bus. The loss of one bus does not affect the ability of the containment heat removal systems to maintain containment temperature and pressure below the design values in a post-accident mode.

The [PLANT NAME] CSS consists of [Substitute plant-specific configuration if it differs from the following description] two independent and redundant loops each containing a spray pump, shutdown heat exchanger, piping, valves, spray headers, and spray nozzles. It has two modes of operation, which are:

1. The injection mode, during which the system sprays borated water from the refueling water tank (RWT) into the containment, and

2. The recirculation mode, which is automatically initiated by the recirculation actuation signal (RAS) after low level is reached in the RWT. During this mode of operation, the safety injection system (SIS) sump provides suction for the spray pumps.

Containment spray is automatically initiated by the containment spray actuation signal coincident with the safety injection actuation signal and high containment pressure signal. If required, the operator can manually activate the system from the main control room.

Each CSS pump, together with a CCS loop, provides the flow necessary to remove the heat generated inside the containment following a LOCA or MSLB. Upon system activation, the pumps are started, and borated water flows into the containment spray headers. When low

level is reached in the RWT, sufficient water has been transferred to the containment to allow for the recirculation mode of operation. Spray pump suction is automatically realigned to the SIS sump upon a RAS.

During the recirculation mode, the spray water is cooled by the shutdown heat exchangers prior to discharge into the containment. The shutdown heat exchangers are cooled by the component cooling water system. Post-LOCA pH control is provided by [Substitute plant-specific configuration if it differs from the following description] trisodium phosphate dodecahydrate, which is stored in stainless steel baskets located in the containment near the SIS sump intake.

Based on a review of the design-basis requirements for the CSS, the NRC staff concluded that the loss of one CSS train is well within the design-basis analyses. The plant status with both CSS trains inoperable is covered by TS 3.6.6A, ACTION G., which states:

> "[With] two containment spray trains inoperable or any combination of three or more [CSS/CCS] trains inoperable, LCO [Limiting Condition for Operation] 3.0.3 shall be entered immediately."

ACTION G addresses the condition in which two CSS trains are inoperable and requires restoration of at least one CSS train to OPERABLE status within 1 hour or the plant be placed in HOT SHUTDOWN in 6 hours and COLD SHUTDOWN within the following 30 hours, with COLD SHUTDOWN being the acceptable end state. These requirements are consistent with similar requirements elsewhere in the TS and, therefore, are acceptable.

The plant status with one CSS train and one CCS train inoperable is covered by TS 3.6.6A, ACTION D, which states:

"[With] one containment spray and one containment cooling train inoperable, restore containment spray train to OPERABLE status within 72 hours, or restore containment cooling train to OPERABLE status within 72 hours."

ACTION D ensures that the iodine removal capabilities of the CSS are available, along with 100 percent of the heat removal needs after an accident. The supporting analyses performed in Reference 1 did not evaluate the concurrent inoperabilities of one CSS train and one CCS train. Therefore, the current CT of 72 hours is retained in Condition D. The 72-hour CT was developed taking into account the redundant heat removal capabilities afforded by combinations of the CSS and CCS, the iodine removal function of the CSS, and the low probability of a DBA occurring during this period.

3.2 Probabilistic Risk Assessment Evaluation

The proposed extension of the CSS CT from 72 hours to seven days affects plant risk by impacting:

1. Accident sequences that can be prevented from leading to core damage.
2. Accident sequences that can be mitigated following core damage.

The CSS therefore affects both core damage frequency (CDF) and large early release frequency (LERF). This is because the CSS performs the critical function of controlling containment temperature and pressure to cool the reactor coolant system (RCS) inventory that is spilled in the sump as a result of a LOCA (core damage prevention role) and preventing the release of radionuclides subsequent to a core damage event (core damage and radionuclide

release mitigation role).

[The following paragraph will contain plant-specific information based on the plant's ability to use the shutdown cooling system (SDCS) as a backup to the CSS. The licensee should provide a plant-specific system configuration description based on whether its SDCS can be used as a backup to the CSS pump.]

The proposed CT extension also impacts the long-term cooling function that can be provided by the SDCS following a small-break LOCA, steam generator tube rupture (SGTR), or MSLB. If entry into the extended CT is caused by a CSS pump outage, the plants with the ability to use the SDCS as a backup to the CSS pump can still preserve the spray function of the affected train. If, however, a SDCS heat exchanger is removed from service, then both the CSS and SDCS capability of the affected train would be lost unless cross-connect capability with another unaffected system (e.g., service water) is possible. However, this cross-connect capability should not be credited unless it is proceduralized.

The NRC staff used a three-tiered approach to evaluate the plant-specific risk impact associated with the proposed TS changes. The first tier evaluates the plant-specific PRA model and the impact of the proposed CT extension on plant operational risk. The second tier addresses the need to preclude potentially high risk configurations by identifying the need for any additional constraints or compensatory actions that, if implemented, would avoid or reduce the probability of a risk-significant configuration during the time when one CSS train is out of service. The third tier evaluates the licensee's proposed Configuration Risk Management Program (CRMP) to ensure that the applicable plant configuration will be appropriately assessed from a risk perspective before entering into, or during, the proposed CT.

In Reference 2, the NRC staff found that the risk analysis methodology and approach used by the CEOG to estimate the risk impact were reasonable. In its SE, the NRC staff also stated

that, for most plants that participated in the joint application report, the risk impact can be shown to be consistent with the acceptance guidelines for change in CDF (ΔCDF), change in LERF (ΔLERF), incremental conditional core damage probability (ICCDP), and incremental large early release frequency (ICLERP) specified in Regulatory Guide (RG) 1.174 (Reference 3) and RG 1.177 (Reference 4) and the associated Standard Review Plan (SRP) Chapters 19.0 and 16.1 of NUREG-0800 (Reference 5). However, not all CE plants participated in the joint application report, and the estimated risk impacts for some plants exceeded the Reference 3 and/or Reference 4 acceptance guidelines, which would require additional justifications and/or compensatory measures to be provided for these plants to be determined to have acceptable risk impacts.

In Reference 2, the NRC staff also found that the Tier 2 and Tier 3 evaluations, as described in Reference 4, could not be approved generically since they were not complete, which would require that each individual plant-specific license amendment seeking approval through TSTF-409, Rev. 2 would need to include an assessment with respect to the Tier 2 and Tier 3 principles of Reference 4.

Based on the above discussion, the NRC staff identified conditions that must be addressed in the licensee's plant-specific application requesting adoption of TSTF-409, Revision 2. In its application dated [DATE], [LICENSEE] provided supporting information for each of the conditions which met the NRC staff's expectations and acceptance criteria [with the following exceptions: *list any exceptions to the conditions stated in the model LAR*].

3.2.1 Commitment

The Reference 4 Tier 3 program ensures that, while the plant is following the TS ACTIONS associated with an extended CT for restoring an inoperable CSS to operable status,

additional activities will not be performed that could further degrade the capabilities of the plant to respond to a condition that the inoperable CSS is designed to mitigate and, as a result, increase plant risk beyond that determined by the Reference 1 analyses. A licensee's implementation of Reference 4 Tier 3 guidelines generally implies the assessment of risk with respect to CDF. However, the proposed CSS extended CT impacts accident sequences that can be mitigated following core damage and, consequently, LERF as well as CDF. Therefore, [LICENSEE] enhanced its CRMP [optional: as implemented under 10 CFR 50.65(a)(4), the Maintenance Rule,] to include a LERF methodology and assessment.

3.3 Summary

Having met the conditions identified in the model license amendment request (LAR), the NRC staff finds that the licensee's plant-specific LAR is consistent with the previous NRC staff approval of Reference 1, as documented in the Reference 2 and TSTF-409, Rev. 2, and thus is acceptable. This determination is based on the following:

1. The traditional engineering evaluation reveals that the loss of one CSS train is well within the design-basis analyses.

2. Based on the licensee meeting the conditions identified in the model LAR, the NRC staff finds that there is minimal impact of the CT extensions for the CSS system on plant operational risk (Tier 1 evaluation).

3. Meeting the conditions identified in the model LAR will ensure that the licensee's implementation will identify potentially high risk configurations and the need for any

additional constraints or compensatory actions that, if implemented, would avoid or reduce the probability of a risk-significant configuration (Tier 2 evaluation).

4. Meeting the conditions identified in the model LAR will ensure that the risk-informed CRMP proposed by the licensee will satisfactorily assess the risk associated with the removal of equipment from service during the proposed CSS CT (Tier 3 evaluation) and the CRMP and plant risk will be managed by plant procedures.

4.0 REGULATORY COMMITMENT

The licensee's letter dated [DATE], contained the following regulatory commitment: [STATE THE LICENSEE'S COMMITMENT AND ENSURE THAT IT SATISFIES THE COMMITMENT IN SECTION 3.2.1 OF THIS SE].

The NRC staff finds that reasonable controls for the implementation and for subsequent evaluation of proposed changes pertaining to the above regulatory commitment are best provided by the licensee's administrative controls process, including its commitment management program. The above regulatory commitment does not warrant the creation of a license condition (item requiring prior NRC approval of subsequent changes).

5.0 STATE CONSULTATION

In accordance with the Commission's regulations, the [STATE] State official was notified of the proposed issuance of the amendment[s]. The State official had [CHOOSE ONE: (1) no comments, OR (2) the following comments - with subsequent disposition by the staff].

6.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding [(XX FR XXXXX, dated Month DD, YYYY)]. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment

7.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

8.0 REFERENCES

1. Joint Applications Report: Modification to the Containment Spray System, and Low Pressure Safety Injection System Technical, CE Owners Group, CE NPSD-1045, March 2000.

2. SE by the Office of Nuclear Reactor Regulation Related to CE Owners Group CE-NPSD-1045, “Joint Application Report, Modification to the Containment Spray System, and the Low Pressure Safety Injection System Technical Specifications,” December 21, 1999.

3. U.S. NRC RG 1.174, “An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis,” Revision 1, November 2002.

4. U.S. NRC RG 1.177, “An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications,” August 1998.

5. NUREG-0800, “Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants,” June 1996.

Model No Significant Hazards Consideration

Description of Amendment Request: The proposed amendment would revise the technical specifications to extend the completion time (CT) from 72 hours to seven days to restore and inoperable containment spray system (CSS) train to operable status, and add a Condition describing the required Actions and CT when one CSS and one containment cooling system (CCS) are inoperable.

Basis for proposed no significant hazards consideration determination: As required by 10 CFR 50.91(a), an analysis of the issue of no significant hazards consideration is presented below:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No.

   The proposed change extends from 72 hours to 7 days the CT for restoring and inoperable CSS train to operable status. Being in an ACTION is not an initiator of any accident previously evaluated. Consequently, the probability of an accident previously evaluated is not significantly increased. The consequences of an accident while relying on ACTIONS during the extended CT are no different than the consequences of an accident while relying on the ACTION during the existing 72-hour CT. Therefore, the consequences of an accident previously evaluated are not significantly increased by this change. Therefore, this change does not involve a significant increase in the probability or

consequences of an accident previously evaluated.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The proposed change extends from 72 hours to 7 days the CT for restoring and inoperable CSS train to operable status. The proposed change does not involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No.

The proposed change extends from 72 hours to 7 days the CT for restoring and inoperable CSS train to operable status. [LICENSEE] performed risk-based evaluations using its plant-specific probabilistic risk assessment (PRA) model in order to determine the effect of this change on plant risk. The PRA evaluations were based on the conditions stipulated in NRC staff safety evaluations approving both Joint Applications Report CE NPSD-1045-A, “Joint Applications Report, Modifications to the Containment Spray System and The Low Pressure

Safety Injection System Technical Specifications," and Technical Specification Task Force Change Traveler, TSTF-409, Revision 2, "Containment Spray System Completion Time Extension (CE NPSD-1045-A)." The results of these plant-specific evaluations determined that the effect of the proposed change on plant risk is very small. Therefore, this change does not involve a significant reduction in a margin of safety.

Based on the above, the proposed change involves no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and accordingly, a finding of no significant hazards consideration is justified.

Dated at Rockville, Maryland, this __th day of _____2006.

FOR THE NUCLEAR REGULATORY COMMISSION

Project Manager
Plant Licensing Branch [ ]
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Instead, licensees desiring significant variations and/or additional changes should submit a LAR that does not claim to adopt TSTF-409.

Public Notices

This notice requests comments from interested members of the public within 30 days of the date of this publication. Following the NRC staff's evaluation of comments received as a result of this notice, the NRC staff may reconsider the proposed change or may proceed with announcing the availability of the change in a subsequent notice (possibly with some changes to the model LAR, model SE or model NSHC determination as a result of public comments). If the NRC staff announces the availability of the change, licensees wishing to adopt the change will submit a LAR in accordance with applicable rules and other regulatory requirements. The NRC staff will, in turn, issue a notice of consideration of issuance of amendment to facility operating license(s) for each LAR, a proposed NSHC determination, and an opportunity for a hearing. A notice of issuance of an amendment to operating license(s) will also be issued to announce the revised requirements for each plant that applies for and receives the requested change.

Dated at Rockville, Maryland this 29th day of March 2006.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Thomas H. Boyce, Branch Chief
Technical Specifications Branch
Division of Inspection and Regional Support
Office of Nuclear Reactor Regulation

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